ABSTRACT OF THE DISCLOSURE

The present invention relates to a capacitor of a semiconductor memory cell and a method of manufacturing the same wherein a capacitor includes a first insulation layer having a buried contact hole, formed on a semiconductor substrate, and a buried contact plug filling a portion of the buried contact hole. A diffusion barrier spacer is formed on an inner surface of the buried contact hole above the buried contact plug. A second insulation layer is formed, having a through hole larger than the buried contact hole, for exposing the diffusion barrier spacer and a top surface of the contact plug. A barrier layer is formed on the through hole and a lower electrode is formed on the barrier layer. A dielectric layer is formed on the lower electrode and an upper surface of the second insulation layer and an upper electrode is formed on the dielectric layer.